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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,397	07/09/2003	Christopher Hsu	LEE 2 00184	1371
27885	7590	05/12/2005	EXAMINER	
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			SHAW, CLIFFORD C	
			ART UNIT	PAPER NUMBER
			1725	
DATE MAILED: 05/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/616,397	Applicant(s) HSU ET AL.	
	Examiner Clifford C. Shaw	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0709,1228,0321</u> . | 6) <input type="checkbox"/> Other: _____ |

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Detailed Action

1.) In his response filed on 3/21/2005, applicant elects, without traverse, the single species of figures 1 and 2, listing claims 1-47 as readable thereon. Applicant has canceled claims 48-52. Accordingly, claims 1-47 are examined in the instant Office action.

2.) In the Information Disclosure Statement filed on 7/9/2003, the first three U.S. patent documents listed on the form PTO-1449 have been crossed through as "not considered" by the examiner. The document numbers, publication dates, and patentee names for these documents do not match. Because it cannot be determined what documents applicant intended to list, the three documents have not been considered.

3.) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4.) Claims 1-6, 11-19, 24-30, 35-42, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over the German document no. DE19754857A1 (cited by applicant). Figure 1 and the English abstract of the German document no. DE19754857A1 disclose some of the subject matter claimed, including: welding gun at 7,8 with contact tip at 10; a welding wire 6; first and second electromagnetic waves associated with laser sources s1 and s2; and receivers associated

Art Unit: 1725

with elements e1 and e2. The claims differ from the German document no. DE19754857A1 in calling for: a measuring device in claim 1; particular wavelengths in claims 2-6 and 26-30; particular positioning of the wire with respect to the electromagnetic wave as in claims 14-17 and 38-40; the use of a charge coupled device for the light receiver in claims 19 and 42. These differences do not patentably distinguish over the prior art. It is considered obvious that the system of the German document no. DE19754857A1 is connected to a "measuring device" because this system is disclosed as determining a welding wire position and such a determination would obviously require circuitry beyond to photo-sensors shown, this circuitry constituting the "measuring device". In regard to the particular wavelengths, the same are considered to be representative of an arbitrary and therefore obvious choice of wavelengths available for the lasers s1 and s2 in the German document no. DE19754857A1. The particular wire positions claimed are not seen to be critical for any particular result. The system of the German document no. DE19754857A1 could obviously be configured to sense wire in the positions claimed based on routine engineering considerations such as expected different wire stick-out lengths from the welding gun in different welding situations. In regard to claims 19 and 42, it would have been obvious to have used a charge coupled device for the sensors in the German document no. DE19754857A1, the motivation being to implement a broad teaching of the German document no. DE19754857A1 (use a light sensor) with a specific known instantiation of that teaching.

5.) Claims 21-23 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the German document no. DE19754857A1 (cited by applicant) as applied to claims 1-6, 11-19, 24-30, 35-42, and 47 above, and further in view of Marhofer et al. (5,932,123). The only

Art Unit: 1725

aspects of the claims to which the rejection above does not apply are: the provision for utilizing particular analysis approaches for the sensed welding parameter (i.e., as in claims 21, 44); the provision for storing a determined welding parameter in memory; and correlating the stored parameter to a time, location, or other aspect of the weld. These differences do not patentably distinguish over the prior art. At the time applicant's invention was made, it would have been obvious to have stored the sensed parameter in the system of the German document no.

DE19754857A1 in a memory and correlated the same with time and location, the motivation being the teachings of Marhofer et al. (5,932,123) that it is advantageous to store welding parameters correlated at least with time and location (see figure 8 and the discussion in column 10 in Marhofer et al. (5,932,123)). In regard to claims 21 and 44, it would have been obvious to have subjected the stored data as taught by Marhofer et al. (5,932,123) to any conventional statistical analysis, including one based on a standard deviation as set forth in the claims, the motivation being to analyze the welding data for conformance to desired results, thereby satisfying the claims.

6.) Claims 1-20, 24-43, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanouette et al. (6,091,048) taken with the Japanese document no. JP7-198346A. Figure 1 and the discussion at column 5, line 32 through column 6, line 43 disclose a welder that includes a wire diameter sensor as part of the system. The claims differ in calling for a particular type of optical sensor and in calling for particular positioning of the sensor with respect to the welding gun. These differences do not patentably distinguish over Lanouette et al. (6,091,048). At the time applicant's invention was made, it would have been obvious to have used any well known

Art Unit: 1725

type of wire diameter sensor in the system of Lanouette et al. (6,091,048). In particular, it would have been obvious to have used a wire diameter system such as that taught by the Japanese document no. JP7-198346A that includes a scanned laser beam, the motivation being to implement a broad teaching of Lanouette et al. (6,091,048) (use a wire diameter sensor) with a particular known instantiation of that teaching.

7.) Claims 21-23 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanouette et al. (6,091,048) taken with the Japanese document no. JP7-198346A as applied to claims 1-20, 24-43, and 47 above, and further in view of Marhofer et al. (5,932,123). The only aspects of the claims to which the rejection above does not apply are: the provision for utilizing particular analysis approaches for the sensed welding parameter (i.e., as in claims 21, 44); the provision for storing a determined welding parameter in memory; and correlating the stored parameter to a time, location, or other aspect of the weld. These differences do not patentably distinguish over the prior art. At the time applicant's invention was made, it would have been obvious to have stored the sensed parameter in the system of the combination in a memory and correlated the same with time and location, the motivation being the teachings of Marhofer et al. (5,932,123) that it is advantageous to store welding parameters correlated at least with time and location (see figure 8 and the discussion in column 10 in Marhofer et al. (5,932,123)), satisfying claims 22, 23, 45, and 46. In regard to claims 21 and 44, it would have been obvious to have subjected the stored data as taught by Marhofer et al. (5,932,123) to any conventional statistical analysis, including one based on a standard deviation as set forth in the claims, the motivation being to analyze the welding data for conformance to desired results,

Art Unit: 1725

thereby satisfying the claims. In regard to the particular wavelengths, the same are considered to be representative of an arbitrary and therefore obvious choice of wavelengths available for the laser taught by the Japanese document no. JP7-198346A. The particular wire positions claimed are not seen to be critical for any particular result. The system of the combination could obviously be configured to sense wire in the positions claimed based on routine engineering considerations such as expected different wire stick-out lengths from the welding gun in different welding situations

Any inquiry concerning this communication should be directed to Clifford C Shaw at telephone number 571-272-1182. The examiner can normally be reached on Monday through Friday of the first week of the pay period and on Tuesday through Friday of the second week of the pay period.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas G. Dunn, can be reached at 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 1725

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Clifford C Shaw
Primary Examiner
Art Unit 1725

May 11, 2005